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SUGHRUE MION, PLLC				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/537,496

Applicant(s)

HOVINEN ET AL.

Examiner

John Hoffmann

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 17-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1: There is confusing antecedent basis for "the softening point of the glass preform"; most fibers have at least two glasses and thus two softening points - it is suggested the claim recite "a softening point of the preform". There is no antecedent basis for "the direction" (last line).

Claim 3: it is unclear if this is a further step of establishing – or if it just further limits the establishing of claim 1. Claim 2 is unclear for the same reason. There is no antecedent basis for "the outlet opening of the processed preform" (claim 3) - the preform has the outlet.

Claim 4: It is unclear if "the gas flow" is the inert gas flow or some other flow. There is no antecedent basis for "the total gas flow" – this applies to claim 7 as well.

Claim 6, there is confusing antecedent basis for the flow and the inert gas – it is unclear if they are in addition to those of claim 1, or if they further limit those of claim 1.

Claim 7: There is no antecedent basis for "the gas distribution. and confusing antecedent basis for "diffusion barrier". There is also no antecedent basis for "the purge of flow" or "the intermittent space".

Claim 10: there is no antecedent basis for "the flow of gas caused by the chimney effect, or "the chimney effect".

Claim 11: there is confusing antecedent basis for "shape". The term "like" is confusing as to whether drawing is like post-processing or if the post-processing like drawing.

Claim 13: there is no antecedent basis for "the clearance" and "the exterior diameter". It is unclear whether this implies that claim 1 is limited to preforms with a single diameter. As to the limitation that the clearance "is 0.1 -10 mm, it is unclear if it is claiming that the clearance starts out at 0.1 and increases to 10 mm, or if it means the clearance is between 0.1 and 10 mm, or something else.

Claim 14: there is confusing antecedent basis for "barrier flow".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 11-13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Orita 6192715.

Looking to figure 3 of Orita: 212 is the preform that is introduced through an opening of furnace 201. The preform is heated above the softening point and a tensile forces (for example col. 2, lines 10-14.) It is deemed that Orita has plural forces in as much as the present invention does. There is no explanation what tensile force besides tension might be used. The predetermined shape is the shape of an optical fiber. The processed portion is clearly drawn from an outlet opening at the bottom of the furnace. The two portions are flushed with an inert gas, see for example, col 3, lines 42-47.

As to maintaining the level: see col. 3, lines 47-54. It is deemed inherent that since the gas flowing into 206 and 207 prevents impurities from entering the furnace from the outside, the only possible impurities would be the same impurities in the inert gas fed into the furnace. The barrier flow of inert gases at 206 and 207 establish a diffusion barrier against the inflow of undesired gaseous components from the ambient air by generating a barrier flow of inert gas. As to "the forces of diffusion" - this is deemed inherent in as much as applicant has such. Applicant does not disclose a single force of diffusion - much less plural forces. Diffusion is the process of intermingling of gases as a the result of their spontaneous movement caused by thermal agitation (Brownian motion) from a region of higher to one of lower concentration. There is no 'force' that acts on a contaminate/gas that causes diffusion.

Claims 2-3, 12 are clearly met.

Claim 4: such is deemed inherent because the inlet flow would be directly equal to the total flow multiplied by the ratio of the inlet conductance to the total conductance. Likewise for claim 5, the resistance to flow is the inverse of the cited formula. Most importantly, since the constant "K" is unspecified, one can calculate K in reverse. In other words: For any F1 and F (of claim 4) in substantial steady state - one can find a K so that the equations are met.

Claim 6 is inherently met because the chimney effect cannot cause more gas to flow through the inlet than flows through the outlet. Mass in must equal the mass out.

Claim 7: the diffusion barrier is clearly met. As to it being "based on the gas distribution according to equation (2)": examiner interprets this to be the equation of claim 4, even though the specification uses a different equation 2. This is because the claim 4 equation is broader in scope and because claim terms cannot have different meanings for the same term. Thus Claim 7 is met for substantially the same reason claim 4 is. It is also noted if there is no intermittent space $C_3 = 0$.

Claim 8 is clearly met because only the outlet opening can "direct" gas "through the outlet opening", the inlet opening only directs gas fed into the furnace through the outlet opening. This is not to say that the outlet opening actually directs the gas. Rather the claim relates to what "will allow"; thus it is an intended use limitation. In other words: there is no step of directing, or allowing or the like.

Claim 11: The claim lacks any steps, for example "drawing the preform". The claim also fails to relate the tensile drawing to any other claimed steps. Thus it is deemed no step is required, nor is such related to the other steps. Thus it is deemed to

a product-by-process type limitation - wherein the structure (i.e. the preform) of claim 1 is now being defined by the method of creation - e.g. (wherein the preform of claim 1 was created by subjecting it to tensile drawing in order to stretch the preform into a shape suitable for post-processing.) It is deemed that this limitation fails to define over the Orita preform, since it is indistinguishable from one created by tensile drawing.

Claim 13: Orita only discloses 100 mm preforms – the claim only limits situations where there is an 80 mm preform.

Claim 16: requires rotation during "heat-processing". But no "heat-processing" is required. The specification only mentions "heat-processing" once, but does not describe what this may or may not be. Since Orita has no "heat-processing" the claim is met.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9-10 , 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orita 6192715.

Claim 9: Although Orita does not teach the conductances, such would have been obvious in light of figure 3 and applicants equation of claim 5. First it is noted that an opening is nothingness, thus one can essentially pick and chose which boundaries of figure 3 correspond to the height of the opening. The drawing suggest the height of 207 is much less than the height from the top of 220 to the bottom of 215. The width of the outlet much greater than the width of 207. And the lengths of the two openings are roughly the same. Although drawings are not interpreted as being to scale, they reasonably suggest relative sizes. For example the width and height of opening 207 must be smaller than the height and length of outlet opening.

Claim 10: it would have been obvious to have the flow be as much as desired, depending upon the amount of fiber desired. That is the larger the scale, the larger the relative gas flow. It would have been obvious to have more than 1 SLM gas flow out the bottom - in particular since Orita teaches a "large amount of gas is discharged" (col. 3, line 56). Thus the total amount of gas flow into the furnace is equal to the gas out the top plus the gas out the bottom. And if the gas out the bottom is say 2 SLM, then total amount = 2 SLM + the top/chimney gas.

Claim 14: it would have been obvious to make the furnace as large or small as desired, depending upon the scale of the fiber operation. **From MPEP 2144.04**

A. Changes in Size/Proportion

In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).

In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Claim 15: Orita does not disclose the use of a graphite induction furnace.

Examiner takes Official Notice that such are well known furnace types used to draw fibers with well known advantages, such as the ability to control the temperature profile by the distribution of graphite. It is noted that page 1 applicant admits such furnaces

are known. It would have been obvious to use a graphite induction furnace for any of its well known advantages in the Orita method.

Response to Arguments

Applicant's arguments filed 6/26/2009 have been fully considered but they are not persuasive.

It is argued that claim 1 was amended as suggested by Examiner. It is noted the suggestion was for "a" softening point, not "the" softening point.

It is argued that Orita's conditions are not sufficient for ensuring that impurities would not enter the furnace by diffusion against the direction of flow. Examiner finds this not to be very relevant, because the claims do not require ensuring impurities won't enter by diffusion as argued. On the contrary, page 5, lines 25-26 of the specification it is clear that applicant intended the term "diffusion barrier" to have a broad enough scope to encompass situations where there is penetration of impurities. Thus one reading the claims in light of the specification would understand that some diffusion is permitted. The same applies to the argument that Orita does not have an *efficient* diffusion barrier – no standard for the efficacy of the barrier is required by the claims. The same applies to the argument about Orita not preventing diffusion.

Moreover, the fair reading of Orita is that Orita states the gas is prevented entry: col. 3, lines 44-53. Since US patents are presumed valid, it is presumed they comply with 35 USC 112 - first paragraph, and thus it is fully enabled and thus the Orita method

does prevent entry of outside gases. Applicant's assertion (with no evidence) that Orita does not prevent entry is insufficient to overcome the presumption of validity and enablement.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Hoffmann
Primary Examiner
Art Unit 1791

/John Hoffmann/
Primary Examiner, Art Unit 1791